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| 10/764,509      | 01/27/2004  | Jung Tac Kang        | 6192.0146.D1        | 9956             |

32605 7590 12/21/2006  
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| EXAMINER |
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NGUYEN, JIMMY H

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| ART UNIT | PAPER NUMBER |
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2629

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 12/21/2006 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/764,509

**Applicant(s)**

KANG ET AL.

**Examiner**

Jimmy H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2006 and 13 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-36 is/are pending in the application.
- 4a) Of the above claim(s) 24 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-23, 25-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/621,825.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action is made in response to applicant's RESPONSE TO ELECTION REQUIREMENT AND AMENDMENT filed on 11/07/2006 and the second preliminary amendment filed on 11/13/2006.
2. Applicant's election without traverse of species III, as illustrated in figures 12-16 in the reply filed on 11/07/2006 is acknowledged.
3. Claims 24 and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species II as indicated by the applicant in the RESPONSE TO ELECTION REQUIREMENT, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/07/2006. Claims 18-36 are pending and claims 18-23, 25-31 and 33-36 are considered as follows:

#### *Notice to Applicants*

4. It is note to Applicants that independent claim 18 can't be read in Species I because the display device (i.e., the monitor unit 110) does not comprise the claimed second PCB since the control board 150 is disposed in the main body 100, but not in the display device (110) (see Fig. 3). Further, since independent claim 18 can't be read in Species I, all claims depending upon claim 18 must not recite feature, which is only disclosed in Species I, e.g., claim 24 recites a feature, "the second connecting member is a **flexible printed circuit (FPC)**", which is only read in Species I.

It is note to Applicants that the specification and drawings do not disclose a display device comprising **more than one first PCB** (source PCB) of claim 32. The specification and

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drawings only teaches the display device comprising more than one first connecting member (i.e., data transmission films 363/535/831, see Figs. 2, 8 and 13).

Accordingly, upon the allowance of independent claim 18, claims 24 and 32 will not be considerably allowable for the reasons indicated above. Examiner suggests the Applicants to cancel these claims.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18-23 and 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baek et al. (US 6,977,640 B1, hereinafter Baek), and further in view of Takahashi et al. (US 5,889,572), hereinafter Takahashi.

As to claims above, Baek discloses a known display device (see Fig. 4) comprising a display panel (LC panel 10, see Fig. 4) displaying an image; a second connecting member (FPC 21/13, 15, see Figs. 4-6) attached to a first portion of a second PCB (a timing control board 16, see Figs. 4-6) which is electrically connected to a source driver circuitry (a circuitry including source drivers 14) through the second connecting member (FPC 21/13, 15, see Figs. 4-6). Baek also teaches the second connecting means (21) being a flexible printed circuit (see Fig. 6, col. 3, line 43). Further, as noting in Figs. 4 and 5, Baek further teaches the source driver circuitry (14) electrically coupled to the first portion (top portion) of the display panel (10) through column lines CL and provided on the lower substrate (10a) and the gate driver circuitry (the circuit

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including row drivers 12) electrically coupled to the second portion (left portion) of the display panel (10) through row lines GL and provided on the lower substrate (10a). Accordingly, Baek does not disclose the source driver circuitry (14) implemented by a separate first source PCB, which is attached to the display panel through a first tape carrier package (TCP), and a gate driver circuitry (12) implemented by a separate third gate PCB, which is attached to the display panel through a third tape carrier package (TCP), as presently claimed.

However, Takahashi discloses a related display device comprising a source driver circuitry implemented by a separate first source PCB (600), which is attached to a first (top) portion of the display panel (100) through a first tape carrier package (TCP), and a gate driver circuitry implemented by a separate third gate PCB (610), which is attached to a second (left) portion of the display panel through a third tape carrier package (TCP) (see Fig. 3, col. 2, lines 34-38). Takahashi further teaches the first and third TCPs including driving ICs (see Fig. 2, col. 2, lines 34-38). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the source driver circuitry and the gate driver circuitry disclosed by Baek with the source PCB, gate PCB and TCPs, in view of the teaching in the Takahashi reference, because this would reduce the so-called frame area, as taught by Takahashi (see col. 1, lines 48-54).

7. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baek in view of Takahashi as applied to claim 18 above, and further in view of Furuhashi et al. (US 5,909,205), hereinafter Furuhashi.

As to claim 33, Baek further teaches the display device comprising a signal converting unit (a scanning receiver 42, see Fig. 4) electrically connected to the computer body (20) through

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a FPC (11), for receiving and decoding (converting) RGB video signal and timing control signals (see Figs. 4 and 5, col. 3, lines 12-15), and electrically connected to the second PCB (16) through a third connecting member (see Fig. 4), for providing the converted RGB video signal to the second PCB (16) (see col. 3, lines 12-19). Baek does not expressly teach the RGB being analog or digital and the signal converting unit converting analog RGB video signal into digital video signal, as presently claimed.

However, Furuhashi discloses a related display device comprising a signal converting unit (a unit comprising elements 104, 109, 110, 112 and 118; see Fig. 1) including an A/D converter (104) receiving analog video signal (102) externally provided by the computer, into a digital video signal and providing the converted signal to the display timing generating circuit (120) (the second PCB); see Fig. 1, col. 7, lines 1-22 and col. 8, lines 7-12. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide an A/D converter in the signal converting unit of Baek, in view of the teaching in the Furuhashi reference, because this would allow the display device of Baek capable of receiving an analog video signal from the computer, as known by a person of ordinary skill in the art.

As to claim 34, Fig. 6 of the Baek reference expressly shows the signal converting unit (42) closely attached to a rear plane of the receiving container (the panel housing 22A).

As to claims 35 and 36, Baek discloses the third connecting member for connecting between the signal converting unit (42) and the second board (16) (see Fig. 4). Baek does not expressly teach the third connecting member comprising an upper socket and lower socket, as presently recited in claim 35, or a biting connector, as presently recited in claim 36. However, Official Notice is taken that both the concept and the advantages of utilizing a connecting

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member comprising an upper socket and lower socket, or a biting connector, as presently claimed, are well known and expected in the art. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to replace the third connecting member of Baek with the known connecting member, which comprises either an upper socket and lower socket or a biting connector, because it would allow the signal converting unit easily separated from the second PCB without any special tool, as known by a person of ordinary skill in the art.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawachi et al. (US 6,220,741 B1) discloses a related display device comprising a display panel and a second connecting member (48) attached to a first portion of a second PCB (70) which is electrically connected to a source driver circuitry (44a, 44b) through the second connecting member (48) (see Figs. 3 and 4).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

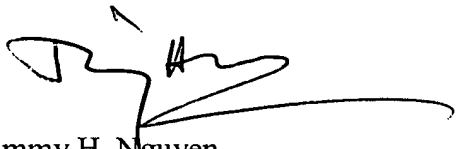
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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JHN  
December 15, 2006



Jimmy H. Nguyen  
Primary Examiner  
Technology Division: 2629